

From wd5ivd@tapr.org Tue Apr 01 11:30:28 1997  
Received: from [208.134.134.40] ([208.134.134.40]) by tapr.org (8.7.5/8.7.3/1.9)  
with ESMTP id LAA12294; Tue, 1 Apr 1997 11:30:26 -0600 (CST)  
Message-Id: <v03007806af66f66a15e4@[208.134.134.40]>  
Mime-Version: 1.0  
Content-Type: text/plain; charset="us-ascii"  
Date: Tue, 1 Apr 1997 11:31:39 -0600  
To: "TAPR-BB list mailing"<tapr-bb@tapr.org>  
From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>  
Subject: Update on past SIG Mail Archives  
Cc: " TAPR SYS " <tapr-sys@tapr.org>

<http://www.tapr.org/tapr/html/taprmmailsearch.html>

now contains both a search engine for past SIG mail archives as well as an  
HTML interface to view messages by index and thread.

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Tucson Amateur Packet Radio  
8987-309 E Tanque Verde Rd #337 \* Tucson, Az \* 85749-9399 \* 817-383-0000  
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e-mail: TAPR@TAPR.ORG ftp: ftp.tapr.org web: <<http://www.tapr.org/>>  
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From wd5ivd@tapr.org Sun Apr 06 15:39:28 1997  
Received: from [208.134.134.40] ([208.134.134.40]) by tapr.org (8.7.5/8.7.3/1.9)  
with ESMTP id PAA12129 for <tapr-bb@tapr.org>; Sun, 6 Apr 1997 15:39:25 -0500  
(CDT)  
Message-Id: <v0302091baf6db904ad77@[208.134.134.40]>  
Mime-Version: 1.0  
Content-Type: text/plain; charset="us-ascii"  
Date: Sun, 6 Apr 1997 15:33:52 -0500  
To: "TAPR-BB list mailing"<tapr-bb@tapr.org>  
From: wd5ivd@tapr.org  
Subject: Attending the 1997 Dayton Hamvention?

Attending the 1997 Dayton Hamvention?  
Then don't miss out on PACK\*BASH!

What?

An event for the digitally-inclined ham, featuring:  
\* Buffet dinner  
\* Keynote address by Tom Clark, W3IWI  
\* TAPR special interest group meetings  
\* "Birds of a Feather" gatherings

When?

Friday evening, May 16, 1997  
Doors open at 7:00 pm; dinner served at 7:30 pm  
Speaker and meetings after dinner

Where?

NCR "Sugarcamp" Conference Center, 101 W. Schantz Ave. --  
South of downtown Dayton, just west of Main St. (Rt 48).  
Maps available on the TAPR web site ([www.tapr.org](http://www.tapr.org)) or at the  
TAPR booth.

How?

Dinner requires advance registration and payment through TAPR.  
Tickets will be available at the TAPR booth on Friday, though  
we strongly encourage registration <before> Hamvention. The cost  
is \$20.00 per person, tax and tip included.

All amateurs are welcome to attend, enjoy the speaker, and  
participate in the meetings, although only those purchasing a dinner  
can eat.

To register, contact:  
PACK\*BASH  
c/o TAPR  
8987-309 E. Tanque Verde Road #337  
Tucson, AZ 85749-9399

Phone: (817) 383-0000  
Fax: (817) 566-2544  
Internet: [tapr@tapr.org](mailto:tapr@tapr.org)

Visa/Mastercard Accepted

Who?

PACK\*BASH is co-sponsored by TAPR -- Tucson Amateur Packet Radio,  
the national leader in digital communication -- and the Miami  
Valley FM Association, Dayton's packet radio club.

For more information (including maps), go to  
<http://www.tapr.org/tapr/html/dayton.html>, or send email to [tapr@tapr.org](mailto:tapr@tapr.org).  
You can request information via packet radio at BASH@N8ACV.#DAY.OH.USA.NOAM.

From [wd5ivd@tapr.org](mailto:wd5ivd@tapr.org) Thu Apr 10 13:49:22 1997  
Received: from [208.134.134.40] ([208.134.134.40]) by [tapr.org](http://www.tapr.org) (8.7.5/8.7.3/1.9)  
with ESMTP id NAA13492; Thu, 10 Apr 1997 13:49:19 -0500 (CDT)  
Message-Id: <v03020934af72de3e5c62@[208.134.134.40]>  
Mime-Version: 1.0  
Content-Type: text/plain; charset="iso-8859-1"  
Content-Transfer-Encoding: quoted-printable  
Date: Thu, 10 Apr 1997 13:49:56 -0500  
To: "TAPR-BB list mailing" <[tapr-bb@tapr.org](mailto:tapr-bb@tapr.org)>,  
"APRS SIG list mailing" <[aprssig@tapr.org](mailto:aprssig@tapr.org)>  
From: "Greg Jones, WD5IVD" <[wd5ivd@tapr.org](mailto:wd5ivd@tapr.org)>  
Subject: TAPR offers the Motorola ONCORE VP GPS

TAPR offers the Motorola ONCORE VP GPS

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TAPR has worked a deal to provide the popular Motorola ONCORE VP GPS engine at a savings for TAPR members. This now allows TAPR to provide a low-end and high-end GPS engine to our members. For full details and pictures of both GPS group purchases, check out <http://www.tapr.org/gps/> for full details.

The price of the Motorola ONCORE VP GPS is:

\$269.00 US for members of TAPR

or

\$290.00 US for non-members

and will include:

- \* Motorola ONCORE VP (B4121P115x) engine (2.00 x 3.25 x 0.64 in.)
- \* Documentation

TAPR will be taking orders for 10+ units, which is the minimum purchase at this time. Once at least 10 units have been purchased, TAPR will order the ONCORE VP units. TAPR will deposit money when the units are ordered and ship when the units arrive at the office.

Please note: This is not an enclosed/sealed unit. It is assumed that the purchasers will be installing the unit in another enclosure for normal and experimental operations like the TAC-2 (Totally Accurate Clock) kit designed by Tom Clark, W3IWI, or the APRS MIC-Encoder for APRS tracking. Both kits will be available at Dayton!

No 10% Discount for TAPR Members. Due to the nature of the purchase, the \$269 purchase price for TAPR members represents the membership discount.

Warranty. TAPR will provide replacement units for DOA units that are promptly reported by the purchaser within 90 days after TAPR ships.

This is not a purchase list, method of payment is expected when you place your order.

If you would like to order one of these units, you can

e-mail [tapr@tapr.org](mailto:tapr@tapr.org),

phone (817) 383-0000, or

fax (817) 566-2544.

Office Hours: Tuesday - Friday 9am - 12pm, 3pm - 5pm Central Time

Questions concerning the unit and details on the buy will be handled on the TAPR APRS Special Interest Group list. To subscribe,

send e-mail to:

[listserv@tapr.org](mailto:listserv@tapr.org).

In the message type

subscribe aprssig YourFirstName YourLastName.  
The server will then send you a message back. Announcements on the status of the shipment will be made to the TAPR APRS SIG and TAPR-BB lists.

#### Shipping and Handling

- \* Shipping and Handling within the US will be \$7.00 US by UPS Ground unless otherwise requested by purchaser.
- \* International Shipping will need to contact the TAPR office and get a quote on the shipping to your country. TAPR uses International Express Mail, unless the purchaser requires something else.

#### =46requently Asked Questions (from a message by Tom Clark, W3IWI)

=46or this group purchase, the VP was chosen in lieu of the stripped-down UT & GT versions as a "does everything for everybody" universal solution -- solving the needs of the "where am I?" and "what time is it?" communities. And FYI -- the ONCORE works just fine in a balloon (no altitude limits) or airplane (travelling slower than Mach 2).

The original ONCORE was called the PVT6 and later renamed the ONCORE BASIC. It was a 70x100 mm board, had on-board DC-DC converter so that it could run from virtually any supply voltage (10-40v) and had a "real RS232" interface. Most of the BASICS were 6 channel, but a few were delivered with 8-channel firmware.

The original PVT6/BASIC served as the basis for Tom Clark's, W3IWI, original "Totally Accurate Clock" which has proved itself by delivering 20-40 nsec timing accuracy & precision. Some TAC results can be gleaned in the .gif plots on my FTP servers:

<ftp://aleph.gsfc.nasa.gov/GPS/totally.accurate.clock/> or  
<ftp://bootes.gsfc.nasa.gov/GPS/totally.accurate.clock/>

The original BASIC was phased out over the past couple of years, replaced by the slightly smaller & lower cost ONCORE VP. To make the VP smaller and save money, Motorola decided to drop the DC-DC converter (+5v supply only) and drop the "true RS232" interface in favor of an inverted-TTL serial port. While the original BASIC cost ~\$400-500, the VP is now available for around \$300.

Both the BASIC and VP came with a wide range of extra cost options (all of which are firmware only -- the hardware is identical). These options include a 1PPS pulse (required for the TAC), carrier phase and DGPS outputs.

In the past year, Motorola has announced two stripped-down versions of the VP targeted to specific markets -- the UT and GT. The UT was designed for

the timing market and has most (but not all) of the high-accuracy timing features available in the VP. The GT is designed to be embedded into automobiles and has only position determining capabilities. One of the things that Motorola removed from the UT/GT was the ordinary, mortal ASCII NMEA messages; the GT/UT talk/listen only to proprietary Motorola binary messages, and the binary command set for each is a subset of that available in the VP/BASIC. The prices are ~\$150 for the GT and ~\$210 for the UT.

## TAC-2 Project

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About a year ago Tom Clark, W3IWI, approached TAPR about his TAC-2 project (Totally Accurate Clock) <http://www.tapr.org/tapr/html/tac2.html> The kit will be available before or Dayton '97.

The TAC-2 can be thought of as a "universal" OEM GPS receiver adaptor with "plug 'n play" support for any of the Motorola ONCOREs, the Garmin GPS-20 or the Trimble SK-8 receivers. It has onboard all the "real RS232" interfaces (including a 1PPS signal on the DCD handshaking line), low-impedance (lab quality) pulse drivers and power supplies you need. It also serves as a platform for the (still being developed) TAC Oscillator Controller (TOC) which will give amateurs a 1:10e9 to 1:10e10 lab-quality frequency standard (locked to GPS). The TAC-2 (complete with any of the OEM receivers) occupies a 3"x4.5"x1" volume and has a large number of user options, including

- an optional switching power supply for battery use
- "UPS" power for uninterrupted operation
- power for external GPS antenna preamp
- Mounting in your PC as if it were a disk drive
- "smart" RS232 ports for DGPS applications

## MIC-E Project

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The other project that the VP can be used for is the APRS MicEncoder Project <http://www.tapr.org/tapr/html/mic-e.html>. The MIC-E (Mic Encoder) installs between your radio mic and radio and allows your GPS unit to transmit APRS AX.25 frames at designated intervals without needing a TNC! The result is a 1200 baud position report compressed to 32 bytes including beginning and ending FLAGS. This equates to about 320ms, including CALLSIGN, DIGIPEATER PATHS, and a minimum message capability. Plus, the packets are still receivable on ANY AX.25 TNC. Very useful in many settings.

The MIC-E excepts a wide range of GPS, which the VP is one of them. You can listen to a discussion of the MIC-E by Bob Bruninga, WB4APR, while Bob uses one or read over the text about the APRS MicEncoder (<http://www.tapr.org/tapr/html/virtual.html>). This unit will be available on or before Dayton 97.

## General Characteristics:

### Receiver Architecture

- \* 8 channel
- \* L1 1575.42 MHz
- \* C/A code (1.023 MHz chip rate)
- \* Code plus carrier tracking (carrier aided tracking)

### Tracking Capability

- \* 8 simultaneous satellite vehicles

## Performance Characteristics:

### Dynamics

- \* Velocity: 1000 knots(515 m/s) > 1000 knots at altitudes < 60,000ft.
- \* Acceleration: 4 g
- \* Jerk: 5 m/s<sup>3</sup>
- \* Vibration: 7.7G per Military Standard 810E

### Acquisition Time (Time To First Fix, TTFF)

- \* 20 sec. typical TTFF hh (with current almanac, position, time and ephemeris)
- \* 45 sec. typical TTFF (with current almanac, position and time)
- \* 2.5 sec. typical reacquire

### Positioning Accuracy

- \* Less than 25 meters, SEP (without SA) [DoD may invoke Selective Availability (SA), potentially degrading accuracy to 100 m (2dRMS)]

- \* DGPS accuracy 1-5 meters typical

### Timing Accuracy (1 pulse Per Second, 1 PPS)

- \* 130 nanosec. observed (1 to) with SA on
- \* In position hold mode, <50 nanosec. observed (1 to) with SA on

### Antenna

- \* Active micro strip patch Antenna Module
- \* Powered by Receiver Module (25mA @ 5 Vdc)
- \* Passive antenna configuration (see optional features)

### Datums

- \* 49 std. datums, 2 user defined, default WGS-84

## Serial Communication

### Output Messages

- \* Latitude, longitude, height, velocity, heading, time, satellite tracking status
- \* NMEA-0183 Version 2.00 (selected formats)
- \* Software selectable output rate (Continuous or Poll)
- \* Broad list of command/control messages
- \* TTL interface

## Electrical Characteristics:

### Power Requirements

- \* 5=B10.25 Vdc 50 mVp-p ripple (max)

### "Keep-Alive" BATT Power

- \* External 2.5 V to 5.25 V 15=B5A (typ.) 60=B5A (max)
- \* 3V on-board battery;15=B5A (typ.) 60=B5A (max)

### Power Consumption

- \* 1.1 W @ 5V

## Physical Characteristics:

### Dimensions

- \* Receiver 2.00 x 3.25 x 0.64 in. [50.8 x 82.6 x 16.3 mm]
- \* Active Antenna Module 4.01 (dia.) x 0.89 in. [102 (dia.) x 22.6 mm]

### Weight

- \* Receiver 1.8 oz. (51g)
- \* Active Antenna Module 4.8 oz. (136.2 g)

### Connectors

- \* Data/Power: 10 pin (2x5) unshrouded header on 0.100" centers
- \* RF: Right Angle OSX (subminiature snap-on)

### Antenna to Receiver

- \* Single coaxial cable (for active antenna-6 dB Interconnection max loss at L1;1575.42 MHz)

## Environmental Characteristics:

### Operating Temperature

- \* Receiver Module -30=BAC to +85=BAC

### Humidity

- \* 95% noncondensing +30=BAC to +60=BAC

### Altitude

- \* 60,000 ft.(18km)(max)
- \* > 60.000 ft.(18 km) for velocities <1000 knots

## Miscellaneous:

### Optional features

- \* 1 PPS timing output
- \* Raw measurement data
- \* On Board Rechargeable Lithium battery
- \* On board LNA option for use with passive antenna
- \* Differential GPS-standard software feature

### DGPS

- \* RTCM-104 format (remote input)
- \* Motorola custom format (master output and remote input)

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## Notice about all TAPR Group Purchases

TAPR coordinates group purchases as a service to help amateur radio operators obtain access to technology at prices better than those typically available in individual unit orders.

Those participating in group purchases must understand that these products are not part of TAPR's standard offering, that TAPR may not have an established relationship with the vendors involved, and that the terms of the purchase may be changed, or the purchase may be canceled, for any reason. If purchase terms (such as price or delivery schedule) significantly change during the order period, TAPR will notify you and permit you a reasonable time in which to cancel your order; if you choose to cancel, TAPR will refund any money you have deposited for the purchase. Once TAPR has committed the group order with the vendor, no further cancellations are permitted. IN NO EVENT WILL TAPR'S LIABILITY TO YOU

EXCEED A REFUND OF ANY MONEY YOU DEPOSITED FOR THE PURCHASE.

Although informal support for products may be available through TAPR's on-line mailing lists and other services, product warranties and entitlement to post-sale support are limited to what is offered by the manufacturer, and are not TAPR's responsibility.

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Tucson Amateur Packet Radio  
8987-309 E Tanque Verde Rd #337 \* Tucson, Az \* 85749-9399 \* 817-383-0000  
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e-mail: TAPR@TAPR.ORG ftp: ftp.tapr.org web: http://www.tapr.org/  
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Greg Jones, WD5IVD  
Austin, Texas  
wd5ivd@tapr.org  
http://www.tapr.org/~wd5ivd  
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From wd5ivd@tapr.org Fri Apr 11 09:20:39 1997  
Received: from [208.134.134.40] ([208.134.134.40]) by tapr.org (8.7.5/8.7.3/1.9)  
with ESMTP id JAA04761; Fri, 11 Apr 1997 09:20:37 -0500 (CDT)  
Message-Id: <v03020924af73f8ba79e6@[208.134.134.40]>  
Mime-Version: 1.0  
Content-Type: text/plain; charset="us-ascii"  
Date: Fri, 11 Apr 1997 09:20:04 -0500  
To: "TAPR-BB list mailing"<tapr-bb@tapr.org>,  
"APRS SIG list mailing"<aprssig@tapr.org>  
From: "Greg Jones, WD5IVD" <wd5ivd@tapr.org>  
Subject: Update TAPR Oncore VP Purchase

I made mistake when I did the section on General Characteristics for the Oncore VP GPS unit.

The unit does not come with an antenna, as was listed in the General Characteristics section.

Sorry about the confusion.

Cheers - Greg

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Tucson Amateur Packet Radio  
8987-309 E Tanque Verde Rd #337 \* Tucson, Az \* 85749-9399 \* 817-383-0000  
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e-mail: TAPR@TAPR.ORG ftp: ftp.tapr.org web: <http://www.tapr.org/>



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From wd5ivd@tapr.org Tue Apr 15 07:15:54 1997  
Received: from [192.168.1.2] (knezek2.coe.unt.edu [129.120.111.42]) by tapr.org  
(8.7.5/8.7.3/1.9) with ESMTP id HAA03809 for <tapr-bb@tapr.org>; Tue, 15 Apr 1997  
07:15:51 -0500 (CDT)  
From: Greg Jones <wd5ivd@tapr.org>  
X-Sender: wd5ivd@tapr.org  
Message-Id: <v0302090aaf792168041a@[192.168.1.2]>  
Mime-Version: 1.0  
Content-Type: text/plain; charset="us-ascii"  
Date: Tue, 15 Apr 1997 07:14:54 -0500  
To: "TAPR-BB list mailing" <tapr-bb@tapr.org>  
Subject: WIRELESS TELECOMMUNICATIONS BUREAU ANNOUNCES FREE BETA TESTING

PUBLIC NOTICE

Federal Communications Commission  
1919 M St., N.W.  
Washington, D.C. 20554

Released: April 8, 1997

WIRELESS TELECOMMUNICATIONS BUREAU ANNOUNCES FREE  
BETA TESTING FOR 30 DAY PERIOD

The Wireless Telecommunications Bureau is making available on a beta test basis, for approximately 30 days, free of charge, access to three database applications: 1) Amateur query; 2) frequency search program for the 929 and 931 MHz databases and; 3) database transaction downloads. The beta test period will begin on April 8, 1997 and will extend to May 12, 1997 for this first group.

Access to the programs is available through the beta test site at <http://gullfoss.fcc.gov/beta.htm>. The site map for the application is from the FCC home page at [www.fcc.gov](http://www.fcc.gov) through to the FCC's Wireless Telecommunications Bureau internet site at <http://www.fcc.gov/wtb/wirehome.html>. Choose Wireless Electronic Commerce on the Wireless Bureau's home page and further choose Beta Page for Future Electronic Commerce Applications. Select your applications from the Beta Testing Page.

The applications are as follows:

Amateur - This application allows realtime query to the Amateur database using a number of parameters including dates, zip codes, licensees, and callsigns. Any comments should be e- mailed to [betacomm@fcc.gov](mailto:betacomm@fcc.gov).

Frequency search program - 929 MHz and 931 MHz - This application does a radius search for a given latitude and longitude on 929 MHz or 931 MHz stations. Any comments should be e-mailed to [betacomm@fcc.gov](mailto:betacomm@fcc.gov).

Transaction download - This application allows users to download from a choice of seven days transactions for each Wireless database. The various database tables are extracted into flat files. Documentation may be downloaded. Each day's data will be overwritten every seven days. At the end of the beta test period, a complete offload of the databases will be available in CD-ROM format from ITS, the FCC's public access contractor. These CD-ROM's are produced quarterly. The transactions online will enable the public to keep up to date records of the Commission's activity using the CD-ROM data as a base for initiating one's own data base. Any comments should be e-mailed to [betacomm@fcc.gov](mailto:betacomm@fcc.gov).

During the beta test period, there will be no charge for access. At the end of the beta testing period, the applications will be available on the FCC's wide area network at a charge of \$2.30 per minute. The first two minutes of access will be free.

Additional applications will be added to the beta testing program as they are available including Form 900 renewal application for all services.

To enroll as an official beta tester and receive E-mail notifications concerning the beta testing, send an E-mail to [khoutz@fcc.gov](mailto:khoutz@fcc.gov).

Further questions may be directed to the Consumer Assistance Branch, toll free 1-800-322- 1117 or to Technical Support (202) 414-1250.

-FCC-

From [wd5ivd@tapr.org](mailto:wd5ivd@tapr.org) Tue Apr 29 23:03:37 1997  
Received: from [208.134.134.40] ([208.134.134.40]) by tapr.org (8.7.5/8.7.3/1.9) with ESMTP id XAA28807; Tue, 29 Apr 1997 23:03:29 -0500 (CDT)  
Message-Id: <v03020914af8c734f764f@[208.134.134.40]>  
Mime-Version: 1.0  
Content-Type: text/plain; charset="us-ascii"  
Date: Tue, 29 Apr 1997 23:04:33 -0500  
To: "Spread Spectrum" <[ss@tapr.org](mailto:ss@tapr.org)>, "TAPR-BB list mailing" <[tapr-bb@tapr.org](mailto:tapr-bb@tapr.org)>  
From: "Greg Jones, WD5IVD" <[wd5ivd@tapr.org](mailto:wd5ivd@tapr.org)>  
Subject: TAPR STA Request for Renewal and Activity Report

We just put up the STA Activity Report (all 75 pages) and request for renewal letter both submitted to the FCC yesterday (April 28th, 1997).

Check [http://www.tapr.org/ss/tapr\\_sta.html](http://www.tapr.org/ss/tapr_sta.html)

We will post something here as soon as we hear about the renewal request.

Keep an eye on <http://www.tapr.org/ss> in May as comments from the upcoming Docket 97-12 first comment period are made available.

Cheers - Greg, WD5IVD

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Greg Jones, WD5IVD

Austin, Texas

wd5ivd@tapr.org

<http://www.tapr.org/~wd5ivd>

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